

CLAIMS

We claim:

1. A massaging apparatus configured to be capable of sandwiching and releasing a leg portion or an arm portion of a user and to be capable of giving pressure stimulation to the sandwiched leg portion or arm portion of the user.
2. The massaging apparatus according to claim 1, comprising:
an armrest configured to support a forearm of the user; and
a forearm massager that is removably mounted to the armrest and that is configured to give pressure stimulation to the forearm of the user with the forearm sandwiched,
wherein the massaging apparatus has a chair-like construction.
3. The massaging apparatus according to claim 2, wherein the forearm massager has a length in a longitudinal direction of the armrest that is shorter than a length of the armrest.
4. The massaging apparatus according to claim 3, wherein the armrest is configured to be able to move the forearm massager in the longitudinal direction of the armrest.
5. The massaging apparatus according to claim 4, further comprising a lock mechanism configured to fix the forearm massager to the armrest.

6. The massaging apparatus according to claim 4, wherein the armrest has a moving means configured to move the forearm massager in the longitudinal direction of the armrest.

7. The massaging apparatus according to claim 6, further comprising:
a backrest configured to support an upper half body of the user;
a reclining angle change means configured to change a reclining angle of the backrest; and

a control circuit configured to control, in synchronization with a change of the reclining angle of the backrest by the reclining angle change means, an operation of the moving means so that the moving means causes the forearm massager to move in a direction according to a reclining direction of the backrest and by a distance corresponding to the reclining angle.

8. The massaging apparatus according to any one of claims 3 to 7, wherein the forearm massager comprises a fix and support portion configured to support the forearm of the user with the forearm massager attached to the armrest.

9. The massaging apparatus according to claim 8, wherein
the forearm massager further comprises:
a pressing portion configured to move close to and away from the fix and support portion and configured to cooperate with the fix and support portion to sandwich the forearm of the user supported on the fix and support portion;

an actuator configured to move the pressing portion to be close to and away from the fix and support portion; and

a massaging portion that is provided at at least one of opposed parts of the fix and support portion and the pressing portion and that is configured to give pressure stimulation to the forearm of the user sandwiched between the fix and support portion and the pressing portion.

10. The massaging apparatus according to claim 9, wherein the actuator is an air bag that is configured to, with the forearm massager attached to the armrest, be connected to an air supply and exhaust device for air intake and air exhaust which is provided at an exterior of the forearm massager.

11. The massaging apparatus according to claim 9 or 10, wherein the massaging portion is an air bag that is configured to, with the forearm massager attached to the armrest, be connected to the air supply and exhaust device for air intake and air exhaust which is provided at the exterior of the forearm massager.

12. The massaging apparatus according to any one of claims 8 to 10, wherein:
the massaging portion has, at the opposed part of the pressing portion which is opposed to the fix and support portion, two air bags arranged in a direction crossing the longitudinal direction of the armrest; and

the massaging apparatus further comprises:

a control circuit configured to control:

an operation of the actuator to cause the pressing portion to move close to the fix and support portion to thereby allow the forearm of the user supported on the fix and support portion to be sandwiched between the fix and support portion and the pressing portion;

then an operation of the massaging portion to cause the two air bags to be expanded to allow the forearm of the user sandwiched between the fix and support portion and the pressing portion to be sandwiched in the direction crossing the longitudinal direction of the armrest; and

then an operation of the actuator to cause the pressing portion to move away from the fix and support portion to thereby allow the two air bags sandwiching the forearm of the user to move away from the forearm of the user.

13. The massaging apparatus according to claim 1, comprising:

a support base configured to have a support face for supporting the leg portion or the arm portion of the user;

a rotation portion configured to be rotatably mounted at a side part of the support base so as to move close to and away from the support face;

a driving portion configured to rotate the rotation portion to be close to and away from the support base; and

a massaging portion mounted at an opposed face of the rotation portion which is opposed to the support face, the massaging portion being configured to give, when the driving portion causes the rotation portion to rotate close to the support face, pressure stimulation to the leg portion or the arm portion of the user supported on the support base.

14. The massaging apparatus according to claim 13, wherein:

the rotation portion has a pushed portion that extends, with respect a rotation center of the rotation portion, to a substantially opposite side of a position at which the

massaging portion is attached;

the support base has an opposed part which is opposed to the pushed portion;

and

the driving portion is configured to vary a distance between the pushed portion and the opposed part.

15. The massaging apparatus according to claim 13, wherein

the rotation portion has a pushed portion at a face thereof which is on substantially opposite side of the opposed face thereof opposed to the support face of the support base;

the support base has an opposed part which is opposed to the pushed portion;

and

the driving portion is configured to vary a distance between the pushed portion and the opposed part.

16. The massaging apparatus according to claim 14 or 15, wherein the driving portion has air bags fixed to the pushed portion and the opposed part, respectively.

17. The massaging apparatus according to any one of claims 13 to 16, wherein the support face is configured to support both leg portions of the user and the support base is provided at both sides with the rotation portions.

18. The massaging apparatus according to any one of claims 13 to 17, wherein the massaging portion is formed of an elastic material.

19. The massaging apparatus according to any one of claims 13 to 17, wherein the massaging portion is a roller that is formed of an elastic material and that is configured to be rotatable around a pivot substantially parallel to a rotation axis of the rotation portion.

20. The massaging apparatus according to any one of claims 13 to 19, further comprising:

a detection module configured to detect a contact of the leg portion or the arm portion of the user with the massaging portion; and

wherein the control portion is configured to repeatedly execute a control process to control the operation of the driving portion:

to operate the driving portion to cause the rotation portion to rotate close to the support face, to cause the detection module to detect the contact of the leg portion or the arm portion of the user with the massaging portion, and then to operate the driving portion to cause the rotation portion to rotate away from the support face, until the detection module does not detect the contact of the leg portion or the arm portion of the user with the massaging portion.

21. The massaging apparatus according to any one of claims 13 to 20, further comprising an air bag provided at the support face.

22. The massaging apparatus according to claim 21, wherein the control portion is configured to control respective operations of the air bag and the driving portion to operate the driving portion to cause the air bag provided at the support face to be expanded and then to cause the rotation portion to rotate close to the support face.

23. The massaging apparatus according to claim 1, comprising:
- a support base configured to be maintained to be immovable and to support the leg portion or the arm portion of the user;
 - a pressing portion configured to cooperate with the support base to sandwich the leg portion or the arm portion of the user supported on the support base and to move, when the support base is immovable, in a substantially longitudinal direction of the leg portion or the arm portion of the user supported on the support base; and
 - a massaging portion that is mounted at least one of opposed parts of the support base and the pressing portion and that is configured to give pressure stimulation to the leg portion or the arm portion of the user sandwiched between the support base and the pressing portion.
24. The massaging apparatus according to claim 23, wherein the support base is configured to support a substantially entire length of a lower thigh or a forearm of the user.
25. The massaging apparatus according to claim 23 or 24, further comprising a driving portion configured to move the pressing portion in the substantially longitudinal direction of the leg portion or the arm portion of the user supported by the support base.
26. The massaging apparatus according to claim 25, further comprising:
- a detection portion configured to detect the leg portion or the arm portion of the user supported on the support base; and

a control portion configured to control, based on a detection result by the detection portion, the operation of the driving portion.

27. The massaging apparatus according to any one of claims 23 to 26, wherein the pressing portion has a roller configured to roll on the leg portion or the arm portion of the user supported on the support base.

28. The massaging apparatus according to any one of claims 23 to 27, wherein:
the support base is configured to support a calf of the user;
the massaging apparatus further comprising a sole massaging portion configured to give mechanical stimulation to a sole of the user.

29. The massaging apparatus according to any one of claims 23 to 26, further comprising a cover portion configured to be rotatable around a rotation axis provided at one end or in the vicinity of the support base so as to be close to and away from the support face of the support base on which the leg portion or the arm portion of the user is supported; and

wherein the pressing portion is mounted at an opposed part of the cover portion which is opposed to the support face so as to move close to and away from the support face, with the cover portion being at a position distant from the support face.

30. The massaging apparatus according to claim 29, further comprising a driving portion configured to move the pressing portion to be close to and away from the support face.

31. The massaging apparatus according to any one of claims 23 to 26, wherein the pressing portion comprises:

a first member that is configured to move distant from the support base while being opposed thereto and to move in the substantially longitudinal direction of the leg portion or the arm portion of the user supported on the support base; and

a second member mounted at an opposed part of the first member which is opposed to the support base and configured to move close to or away from the support base.

32. The massaging apparatus according to claim 31, further comprising a driving portion configured to move the second member to be close to and away from the support base.

33. The massaging apparatus according to any one of claims 29 to 32, wherein the massaging portion has a roller that is rotatably attached to the pressing portion and that is configured to roll on the leg portion or the arm portion of the user supported on the support base.

34. The massaging apparatus according to any one of claims 23 to 33, wherein:

the support base has a guide rail extending in the substantially longitudinal direction of the supported leg portion or arm portion of the user; and

the pressing portion has a movable element engageable with the guide rail so as to be movable along the guide rail.

35. The massaging apparatus according to claim 1, comprising:

- a support base configured to be maintained to be immovable and to support the leg portion or the arm portion of the user;
- a pressing portion configured to cooperate with the support base to sandwich the leg portion or the arm portion of the user supported on the support base; and
- a massaging portion that is mounted at least one of opposed parts of the support base and the pressing portion, that is configured to be able to give pressure stimulation to the leg portion or the arm portion of the user sandwiched between the support base and the pressing portion, and that is configured, when at least the support base is immovable, to change a position at which the pressure stimulation is given to the leg portion or the arm portion of the user.

36. The massaging apparatus according to claim 35, wherein the support base and the pressing portion are configured to sandwich a lower thigh or a forearm of the user over a substantially entire length thereof.

37. The massaging apparatus according to claim 35 or 36, wherein

- the massaging portion has a plurality of massaging elements configured to be capable of giving pressure stimulation to different positions of the leg portion or the arm portion of the user; and
- the massaging apparatus further comprising a control portion configured to perform control to separately drive the respective massaging elements.

38. The massaging apparatus according to any one of claims 35 to 37, further comprising a cover portion configured to be rotatable around a rotation axis provided at

one end or in the vicinity of the support base so as to be close to or away from the support face of the support base on which the leg portion or the arm portion of the user is supported; and

wherein the pressing portion is mounted at an opposed part of the cover portion which is opposed to the support face so as to move close to and away from the support face, with the cover portion inclined at a predetermined angle with respect to the support face.

39. The massaging apparatus according to claim 38, further comprising a driving portion configured to move the pressing portion close to and away from the support face.

40. The massaging apparatus according to any one of claims 23 to 39, wherein the support base is configured to be adjustably positioned.

41. The massaging apparatus according to any one of claims 23 to 40, wherein the massaging portion has an air bag provided at an opposed part of the pressing portion which is opposed to the support base.

42. The massaging apparatus according to any one of claims 23 to 41, wherein the massaging portion has an air bag provided at an opposed part of the support base which is opposed to the pressing portion.

43. The massaging apparatus according to any one of claims 23 to 41, wherein the pressing portion has a vibrator.

44. A forearm massager configured to be removably attached to an armrest mounted at a chair-like massaging apparatus and to give pressure stimulation to a forearm of a user with the forearm sandwiched.
45. The forearm massager according to claim 44, wherein a length of the forearm massager in a longitudinal direction of the armrest is shorter than a length of the armrest.
46. The forearm massager according to claim 45, comprising a lock mechanism configured to allow the forearm massager to be fixed to the armrest.
47. The forearm massager according to claim 45 or 46, comprising a fix and support portion configured to support the forearm of the user, with the forearm massager attached to the armrest.
48. The forearm massager according to claim 47, further comprising:
a pressing portion configured to move close to and away from the fix and support portion and configured to cooperate with the fix and support portion to sandwich the forearm of the user supported on the fix and support portion;
an actuator configured to move the pressing portion to be close to and away from the fix and support portion; and
a massaging portion that is mounted at at least one of opposed parts of the fix and support portion and the pressing portion and that is configured to give pressure

stimulation to the forearm of the user sandwiched between the fix and support portion and the pressing portion.

49. The forearm massager according to claim 48, wherein the actuator is an air bag that is configured to, with the forearm massager attached to the armrest, be connected to an air supply and exhaust device for air intake and air exhaust which is provided at an exterior of the forearm massager.

50. The forearm massager according to claim 48 or 49, wherein the massaging portion is an air bag that is configured to, with the forearm massager attached to the armrest, be connected to the air supply and exhaust device for air intake and air exhaust which is provided at the exterior of the forearm massager.

51. The forearm massager according to any one of claims 46 to 48, wherein the massaging portion has, at the opposed part of the pressing portion which is opposed to the fix and support portion, two air bags arranged in a direction crossing the longitudinal direction of the armrest to allow the forearm of the user sandwiched between the fix and support portion and the pressing portion to be sandwiched in the direction crossing the longitudinal direction of the armrest.